least 42 yards of gravel to the wells of the city water system.

2. Rapid straining through coarse gravel and sand, either naturally through the beds of our dry creeks, or from a contaminated stream to wells, cannot be depended upon adequately to purify polluted water.

3. Septic tanks do not free sewage from typhoid bacilli and other pathogenic organisms, and their untreated effluents may seriously contaminate a stream.

4. As long as the Russian River is used extensively for boating and swimming, it should be protected from the entrance of raw sewage, the untreated effluent of septic tanks, and the seepage from cesspools situated in the river bed.

5. Inasmuch as every typhoid fever epidemic increases the amount of the disease in distant parts of the state and in future generations, and since the question of the water supply and sewage disposal of each community necessarily involves more than the one community, it is the duty of the state to examine all public water supplies and sewage disposal systems at frequent intervals and to prevent the use for drinking purposes of dangerously polluted water. Sanitary engineers in the state's employ are needed for carrying on this work. They are needed, also, to look after engineering aspects of the investigation of water-borne epidemics like the one in Healdsburg, and to aid in emergency measures for their control.

1 Public Health Reports, U. S. Public Health Service, Feb. 19, 1915, XXX, No. 8, 534-536.
2 Sawyer, W. A.: Ninety-three Persons Infected by a Typhoid Carrier at a Public Dinner. Jour. Am. Med. Assoc., Oct. 31, 1914, LXIII, 1537-1542.
3 Jordan, Edwin O., and Irons, Ernest E.: The Rockford (Ill.) Typhoid Epidemic. Jour. of Infectious Diseases, July, 1912, Vol. XI, No. 1, 21-43.
4 Kinnicutt, L. P., Winslow, C.-E. A., and Pratt, R. W.: Sewage Disposal, first edition, 1910, pp. 378-379.
Fuller, George W.: Sewage Disposal, 1912, pp. 472-474.
5 Kelley, E. R., and Macomber, S.: Typhoid Fever Epidemic—Centralia, Washington. American Journal of Public Health, November, 1914, Vol. IV, No. 11, pp. 1035-1045.

SCHOOL HYGIENE CONGRESS.

One of the most important associations to hold its meetings in San Francisco during the Medical Period is the American School Hygiene Congress on the 25th and 26th of June. For the past seven years this Association has stood for the conservation of childhood, especially in the schools. Problems relating to the open air school, the hygiene of the rural school, the organization of health work in cities, and state organizations of child welfare and hygiene teaching will be discussed by authorities from various sections throughout the country. Everyone interested, and every physician should be interested in child welfare, will find an opportunity during these meetings to get in touch with the most advanced opinions along all lines of child welfare work and anyone contemplating being in San Francisco for the American Medical Association meetings should not fail to adjust his time to attend these two days of meetings.

When one stops to consider how little is being done in the way of open air schools in our larger cities in California, how poor the hygiene is in our rural schools, that city organization of child welfare work practically does not exist, except in one or two centers where the beginnings have just been made and that there is no state organization of child welfare in California, one realizes the need of such meetings as the coming American School Hygiene Association meetings. It seems to the writer that there is hardly any subject of more importance to the medical profession of California which will stimulate the development of child welfare work than will be offered during these meetings. California has a few open air schools but we should have many more as our climate lends itself to a development of this type of school. Not half of our public school children have adequate medical supervision and many of the defects which handicap a child's later success in life as well as diminish its capacity to learn, appear and develop unnoticed during its school life. We physicians need to become interested in our public school system, to see the lack of health work being done and that each municipality has adequate machinery for carrying out medical supervision of schools.

WILLIAM PALMER LUCAS,
Secretary-Treasurer, Local Committee of Organization.

REQUEST FOR INFORMATION REGARDING TYPHOID VACCINE.

All available statistics regarding the benefits and limitations of the prophylactic use of typhoid vaccine in the civil population of California are being collected by the Hygienic Laboratory of the California State Board of Health. Physicians are earnestly requested to write a letter containing answers to the following questions and to mail it at once to Dr. W. A. Sawyer, Director of the State Hygienic Laboratory, Berkeley, California:

1. How many persons did you vaccinate against typhoid fever in California before April 1, 1915? Please state the kind (sensitized or ordinary) and the manufacturer of each typhoid vaccine used and the number of persons vaccinated with each.

2. To what extent were the vaccinated persons exposed afterwards to typhoid fever?

3. About how many cases of typhoid fever were there in your community in 1914?

4. Do you think that vaccination has appreciably diminished typhoid fever in your community?

5. In how many of your cases would you consider the reaction after typhoid vaccination (local soreness, malaise, fever) to be absent? Slight? Severe? Severe enough to warrant staying in bed at least half a day? (Please indicate separately the results with each different kind or make of vaccine.)

6. If any cases of typhoid fever have occurred among persons whom you had previously vaccinated against typhoid fever, or in patients who had been vaccinated by other physicians, please supply the following data:

Initials or name of patient.
Physician who administered vaccine.
Kind of vaccine and manufacturer.
Number of doses and dates of each.
Date of first symptoms of typhoid fever.

Basis of diagnosis: symptoms, Widal test, blood culture.

Duration, severity, and final result of the disease.

7. If you have heard of any case of typhoid fever in a vaccinated person, outside your practice, please give the name and address of the physician or patient so that particulars can be obtained.

CASE REPORT.

Fracture of the Left Clavicle by Muscular Action * (Without Blow or Fall).

By P. CAMPICHE, M. D., San Francisco.

M. T. of San Francisco, 13 years old, has never been sick and has always been a very strong boy. On December 20th, 1914, he was pumping air into the tire of his bicycle in the following manner: he was kneeling on the ground, pressing with his right hand on the base of the pump so as to steady it; with his left arm, which was elevated and abducted, he was just starting to bring the handle of the piston down when he felt a sharp pain in his left shoulder. His aunt, who saw him at the time, said that he turned quite pale. However, he did not complain any more about it and did not go to see a doctor.

At the end of January (about five weeks later), his mother brought the boy to me with what she thought might be a "growth" in the shoulder. The lump now felt in the middle of the clavicle has all the characteristics of a healthy callus. The X-ray plate confirms this view, and shows a transverse subperiosteal fracture of the clavicle, with large callus.

Dr. E. Rixford, discussing the case, accepted the diagnosis of fracture by muscular action; he agreed that there is no reason to think of a pathological fracture here as solid union has taken place and the callus is normal in every respect.

AN ACCIDENT WITH NEO-SALVARSAN.**

By A. DAVIDSON, M. D., Los Angeles.

X. Y. A stout, vigorous man, 27 years of age, weighing about 180 lbs., came to my office on the recommendation of his medical attendant, for an injection of neo-salvarsan. Six weeks before he had acquired a chancre and now showed a mild leutic rash of about one week's duration; no headache, fever or other disturbances. He had been taking mercury for about two weeks.

At 12 M. I injected dose iv. (0.6 gr.) neo-salvarsan, using 10 cc. of water in the prescribed manner. Before the needle was withdrawn, a spasm of pain was complained of "in the pit of the stomach," as he expressed it. He tossed in agony, and began retching of mucus. Perspiration rolled off his forehead, the skin of the arms showed extreme "goose flesh," his pulse became small and thready, began to intermit, and in five minutes he was pulseless, cyanosed with clammy skin, all the while conscious and said the pain was now in his heart and agonizing, air hunger was marked.

Fifteen minims adrenalin brought the pulse up so that intermittent beats could be felt, but in a short time he became pulseless again. A second dose was administered and repeated, as it seemed to be required in fifteen minutes again. At 1 p. m. the pulse was palpable but very irregular, he was still markedly cyanosed, lips and eyelids edematous.

I had him removed to the Clara Barton Hospital. When put to bed he vomited freely of some undigested food, and said he felt better; pulse 106 feeble but palpable. Drop enema salt solution given.

At 2:10 pulse 120—very weak.

At 2:30 pulse 126—very weak and intermittent, bowels moved.

At 3:00 pulse 120.

At 4:30 pulse 114—temperature 98°, feeling better.

At 6:00 pulse 95.

At 8:00 pulse 78.

Next day pulse was 66, temperature 98°. Had a light breakfast and except for some weakness which persisted for a few days, he felt quite well.

I am moved to report this case for two reasons: first, to warn you of the possibility of such an accident following the use of the hypodermic method, and secondly, to emphasize the value of adrenalin as the best and probably only means of saving life in these unfortunate cases. Use and repeat the adrenalin as often as the failure of the pulse would indicate. In this case I gave 60 M. of the 1-M. 1000 Sol. in the first hour, and response to its action showed immediately in the return of the pulse.

All of our medical journals have commented on and freely discussed the sickness and occasional fatalities that have followed the use of salvarsan. These are probably wholly due to arsenical poisoning, but of such accidents as I here relate, I have only found indefinite reference in European literature.

The instantaneous collapse that followed the injection, bears out the assertion made by a French observer, who affirmed that salvarsan contained some product that caused marked vaso dilation, and that many of the unfortunate after results were due to this property.

When the patient in question vomited after reaching the hospital, the remains of food expelled had a markedly spirituous odor. The presence of alcohol under such circumstances is an added danger, and may have been the cause of the symptoms displayed, as it too has a vaso dilator action, and may have accentuated that quality in the salvarsan.

BOOK REVIEWS

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M.D., Clinical Professor of Surgery, New York Polyclinic. Second edition, Thiroughly Revised. Octavo of 834 pages, with 860 illustrations. Philadelphia and London, 1915. Cloth, $5.00 net; half morocco, $6.50 net. W. B. Saunders Company, Philadelphia, London.

While this admirable compendium contains a wealth of material of the greatest possible importance to the practitioner, it somehow seems to fall short of being a practically useful work.

A great portion of the book is devoted to methods that belong in the hands of the specialist and should be sought for in the special text-books.

There is much contained in this volume that no practitioner should ever seek in a text-book but should have learned in the clinic or at the bedside.

These points give the reasons why this work should not be added to the working library but place it in line with the dictionaries. In other words for a positive clinical manual it is not exhaustive enough and is too elementary.

G. H. T.

* Presented before the Surgical Section, San Francisco County Medical Society, February 16, 1915.

** Read before the Los Angeles Medical Society, January 7, 1915.